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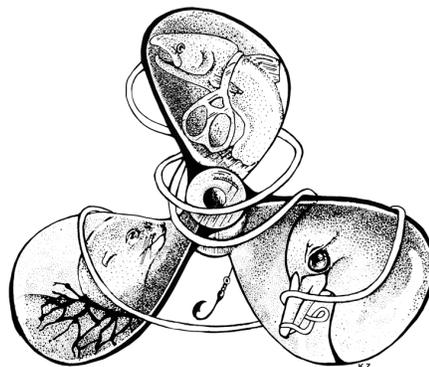
National Marine
Fisheries Service

U.S. DEPARTMENT OF COMMERCE

AFSC PROCESSED REPORT 95-01

Description and Status of Tasks in the
National Oceanic and Atmospheric
Administration's Marine Entanglement
Research Program
for Fiscal Years 1991-1995

May 2005



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DESCRIPTION AND STATUS OF TASKS IN THE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION'S
MARINE ENTANGLEMENT RESEARCH PROGRAM
FOR FISCAL YEARS 1991 - 1995

by

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and

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PREFACE

The purpose of this document is to catalog and update the program tasks undertaken by the National Marine Fisheries Service (NMFS) Marine Entanglement Research Program (MERP) since Fiscal Year 1991. Program tasks were updated through Fiscal Year 1991 in AFSC Processed Report 91-12, which is available from the MERP manager. Task scopes of work, status, costs and products are presented.

Publications and reports referenced herein may be requested from their publishers or the MERP manager:

National Oceanic and Atmospheric Administration
National Marine Fisheries Service, F/AKC
Marine Entanglement Research Program
7600 Sand Point Way NE
BIN C15700
Seattle, WA 98115-0070

Additional information about the impacts of marine debris can be obtained from NOAA's Marine Debris Information Offices which are operated under contract by the Center for Marine Conservation:

Pacific Marine Debris Information Office
312 Sutter Street, Suite 606
San Francisco, CA 94108
(415) 391-6204 FAX (415) 956-7441

or

Atlantic and Gulf of Mexico
Marine Debris Information Office
1725 DeSales Street, NW, Suite 500
Washington, D.C. 20036
(202) 429-5609 FAX (202) 872-0619

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INTRODUCTION

In response to growing public concern over the impacts of marine debris on wildlife, Congress, beginning in Fiscal Year (FY) 1985, appropriated funds for the National Oceanic and Atmospheric Administration's (NOAA) Marine Entanglement Research Program (MERP). The MERP budget has gradually been reduced from a high of \$1,000,000 in FY 85 to \$624,100 in FY 95.

To facilitate the overall reduction of the impacts of persistent wastes on marine and coastal resources, environments and commerce, the MERP is constituted to accomplish the following:

- 1) Identify, monitor, and evaluate adverse impacts of persistent marine debris upon the marine environment and living marine resources;
- 2) Design and implement educational materials and programs to inform industry and the public of the problems caused by persistent marine debris and of the range of available solutions;
- 3) Minimize the amounts of marine debris entering the oceans from all sources by developing procedures, equipment and programs and, where necessary, recommending regulations to prevent the loss or disposal of persistent debris into the marine, coastal, urban and upland environments.

To accomplish these objectives, the program is divided into three major areas of activity: education, mitigation, and impacts research and monitoring. The MERP accepts recommendations for tasks at any time. All such recommendations are considered for inclusion in the coming year's program during the annual MERP Ad Hoc Advisory Committee review, usually in June.

Initially, impacts research and monitoring accounted for nearly one-half of the program's funds. As research activities uncovered more facts, more and more of the program's funds were directed to education and mitigation tasks. In FY 94, education tasks accounted for 34% of program funding; mitigation, 25%; impacts research and monitoring, 25%; and program management, 16%.

The education and public awareness component was originally designed to target the industrial and commercial segments of the maritime community. It soon became clear that the fundamental basis for the ultimate mitigation of the marine debris problem was a broad-based education program reaching all segments of society. Regional programs that were established in 1985 have evolved into national programs that include the entire United States, the

Caribbean Region and the Pacific Islands. Currently, the Marine Debris Information Offices (MDIOs) comprise the major portion of the MERP's education and public awareness program. Education tasks also include the planning and conduct of the Third International Conference on Marine Debris, support for and participation in other related meetings and conferences and local speaking engagements by program personnel.

While the ultimate mitigation of the marine debris problem will be the direct result of public outreach and increased awareness, active debris-removal projects and implementation of solid waste management strategies have been in progress for several years. Mitigation projects are directed towards reducing the amount of solid wastes, particularly plastics, that are discharged into the sea, whether directly or indirectly. Projects include beach clean-ups, solid waste management strategies and guidelines for vessels and ports and fishing gear recovery and recycling programs.

The impacts research and monitoring tasks are designed to increase our understanding of the origin, amount, distribution, fate and effects of plastics and other synthetic debris in the marine environment. Initially, much effort was directed at the Bering Sea and Gulf of Alaska because of the heavy commercial fishing pressure on the region and the resultant high levels of fishing gear-marine mammal interactions. Research efforts have gradually expanded to include most of the coastal regions of the United States.

The following sections provide a description of the tasks comprising the program for FYs 1991, 1992, 1993, 1994 and 1995, status of each task and summary tables showing distribution of funds for each year. This document updates AFSC Processed Report 91-12, Description and Status of Tasks in the National Oceanic and Atmospheric Administration's Marine Entanglement Research Program For Fiscal Years 1985 - 1991.

FUNDING PLAN FOR FISCAL YEAR 1991
ENTANGLEMENT PROGRAM TASKS

FISCAL YEAR 1991 APPROPRIATION		\$703.8K
TASK NO.	TASK TITLE	FUNDING LEVEL
1.	EDUCATION AND PUBLIC AWARENESS	
a.	Marine Debris Information Offices (continued)	\$ 79.7K
b.	Marine Debris Education Program Supplies (continued)	\$ 83.4K
c.	Distribution of "MARPOL Information Packets" via U.S. Coast Guard Networks	\$ 8.5K
d.	Pacific Regional Marine Debris Awareness	\$ 9.5K
2.	MITIGATION	
a.	National Coastal Cleanup Campaign (continued)	\$ 50.0K
b.	Debris Removal from Hawaiian Monk Seal Beaches (continued)	\$ 25.0K
c.	Production of a Procedures Manual for the Safe Disentanglement of Cetaceans	\$ 0.0K
d.	Economic Aspects of Marine Debris (continued)	\$100.0K
e.	Supplement for IMO Guidelines for the Implementation of MARPOL Annex V	\$ 62.8K
f.	Puerto Rico Port Project (continued)	\$ 20.0K
3.	IMPACTS RESEARCH AND MONITORING	
a.	Surveys of Entangling Debris on Alaska Beaches (continued)	\$ 42.0K
b.	National Seashore Marine Debris Survey Program (continued, funded with FY 90 funds)	\$ 0.0K
c.	Evaluation of Ghost Fishing of Plastic Lobster Traps	\$ 20.0K
d.	Effect of Persistent Marine Debris on Juvenile, Pelagic Sea Turtles (continued)	\$ 38.5K

- e. Juvenile Male Fur Seal Survivorship and Entanglement in Marine Debris (continued) \$ 25.0K
 - f. North Pacific Fisheries Observer Debris Data Collection \$ 28.0K
4. MANAGEMENT
- a. Program Management \$ 75.4K

FISCAL YEAR 1991 ACTIVITIES TO ADDRESS
PROBLEMS ASSOCIATED WITH MARINE DEBRIS

1. EDUCATION AND PUBLIC AWARENESS

a. Marine debris information offices (supplemental funding)
\$ 79.7K

These offices provide the mechanisms through which information and materials on the marine debris problem and its solutions are distributed. One office is located in Washington, D.C., and one office is located in San Francisco, California. These offices are supplied by the Marine Entanglement Research Program (MERP) with the necessary materials to disseminate information on the marine debris problem nationwide. Operators of these offices are also encouraged to seek assistance from industry and public organizations. Increased public demand for information has necessitated supplementary funding to the original funding base established last year.

Status: This is a continuing program which has been overwhelmingly successful. A final report summarizing FY 91 activities and the contract transition period (see FY 92) is available from the MERP office.

b. Marine debris education program supplies (continued)
\$ 83.4K

This is a fund to be used by the MERP manager to provide the Marine Debris Information Offices with materials needed to meet public and industry demands. Funds set aside under this task will be utilized to supply necessary educational materials such as posters, brochures, reprints, videotapes, etc.

Status: This is a continuing program. Because of the success of the program, public demand for marine debris education materials remained very high. A final report summarizing FY 91 activities and the contract transition period (see FY 92) is available from the MERP office.

c. Distribution of "MARPOL Information Packets" via U.S. Coast Guard networks (continued)
\$ 8.5K

Funds from this project were used to reprint existing educational material for distribution through the U.S. Coast Guard Auxiliary network. A mandatory and courtesy vessel inspection program is operated by U.S. Coast Guard active and auxiliary members. The Marine Plastic Pollution Research and Control Act (MPPRCA) of 1987 directs NOAA, the U.S.

Environmental Protection Agency (EPA), and the U.S. Department of Transportation to operate a plastic pollution education program. This project met those requirements under the MPPRCA while distributing important educational materials to boaters.

Status: This is an on-going cooperative project between NOAA and the U.S. Coast Guard.

d. Pacific regional marine debris awareness \$ 9.5K

This project established a marine debris education program in the Hawaiian Islands, utilizing the existing Sea Grant education network. The project produced regionally oriented marine debris education material for distribution in the islands.

Status: This was a multi-year program, with expansion into the Pacific Islands Network (PIN) planned.

2. MITIGATION

a. National beach cleanup campaign (continued) \$ 50.0K

This task provides partial funding to continue the established annual National Coastal Cleanup Campaign held during COASTWEEKS. The MERP and EPA cooperate in providing funds for this activity to promote national public awareness of the marine debris problem and assist in the cleanup and prevention of coastal and shoreline debris.

Status: This project continues. Annual reports are available from the Center for Marine Conservation, 1725 DeSales Street, NW, Suite 500, Washington, D.C., 20036, (202) 429-5609.

b. Debris removal from Hawaiian monk seal beaches (continued) \$ 25.0K

This task provided assistance to research teams working to understand and protect the highly endangered Hawaiian monk seal. In the Northwest Hawaiian Islands, these teams make annual visits to monk seal hauling and pupping beaches to gather, catalog, and destroy all of the entangling material washed ashore.

Status: This is a continuing project. Periodic reports are available from the MERP office.

**c. Production of a manual for the safe disentanglement
of cetaceans \$ 0.0K**

Funds for this project will be used to produce a procedures manual for the disentanglement of living whales and other marine mammals.

Status: Unresolved questions with the project's scope of work and the appropriate agency to conduct the research prompted MERP management to redirect these funds to cover increased costs associated with the production of the supplement to IMO Guidelines for the Implementation of MARPOL Annex V (MERP task 2e, below).

d. Economic aspects of marine debris (continued) \$100.0K

This task continued (through the Sea Grant College Program) selected research projects on the economic impact of marine debris. Sea Grant and the MERP jointly selected several research proposals addressing important issues identified by the Economic Working Group during the Second International Conference on Marine Debris.

Status: This is continuing work being conducted by researchers at North Carolina State University, University of Maryland, University of Rhode Island and Virginia Institute of Marine Sciences.

**e. Supplement for IMO guidelines for the implementation of
MARPOL Annex V \$ 62.8K**

This task synthesized all relevant information on significant issues affecting the implementation of MARPOL Annex V into clear and practical supplements for the International Maritime Organization (IMO) "Guidelines for the Implementation of Annex V of MARPOL 73/78." Emphasis placed on provision of adequate port reception facilities.

Status: A comprehensive synthesis of port waste reception information, including recommended actions to supplement existing IMO guidelines for the provision of adequate port reception facilities, was completed. The report was accepted by the U.S. Coast Guard to be presented by the U.S. delegation as an action paper to the 31st meeting of the IMO Marine Environmental Protection Committee. The report is available from the MERP office:

Kearney/Centaur Division of A. T. Kearney, Inc. and L. Martinez. 1991. Revision of the Port Reception Facility Section of the IMO Guidelines for the Implementation of MARPOL Annex V. 92 p.

g. Puerto Rico port project (continued) \$ 20.0K

As modified by the Ad Hoc Committee on Entanglement, this task continued work on the design and implementation in Puerto Rico of a model port/marina project involving marine debris education and the development of an adequate refuse reception facility. The project placed the major emphasis on Spanish-speaking educational supplements, and was modeled after the outline provided in NOAA Technical Memorandum NMFS F/NWR-23, "Dealing with Annex V-Reference Guide for Ports."

Status: A symposium followed project implementation, reporting results and addressing common and regional marine debris issues in the Gulf and Caribbean regions.

3. IMPACTS RESEARCH AND MONITORING

a. Surveys of entangling debris on Alaska beaches (continued) \$ 42.0K

This task continued the collection of baseline data on deposition of debris on the remote beaches of Alaska. Objectives of the task were to make the following determinations: the type and quantities of plastic debris that commonly wash ashore; the deposition rate of entangling debris and; the feasibility of using low-flying aircraft to survey beaches for plastic debris, especially for items such as trawl webs and monofilament gillnet.

Status: This is a continuing project. A report summarizing the results of aerial surveys is available from the MERP office:

Johnson, S. W. 1992. Fixed-Wing Aerial Photography Surveys of Plastic Debris on an Alaskan Beach. AFSC Processed Report 92-04. 8p.

b. National seashore marine debris survey program (continued, funded with \$33.0K in FY 90 funds) \$ 0.0K

This task provided funding for a continuing cooperative agreement with the National Parks Service (NPS) for the conduct of systematic surveys of debris arriving on selected beaches in each region of the United States. The data collected in this activity will be used to systematically evaluate the sources, amounts, and distributional dynamics of seaborne debris on various regions of the United States. These data differ from those collected by voluntary beach cleanups because the scientific methods used will allow expansion of debris loading with time. The methods used in these surveys are the same methods used in the Alaska beach surveys.

Status: This is a continuing project. Annual reports are available from the MERP office.

c. Evaluation of ghost fishing of plastic lobster traps
\$ 20.0K

The occurrence of ghost fishing through lost or discarded fishing gear has become an increasing concern to resource managers as degradable gear has been replaced by persistent synthetic materials. This project will examine the aspects of the ghost fishing problem using plastic lobster traps tested in the laboratory and in the field.

Status: Research on this task was completed and concluded that little direct mortality of lobsters is due to an inability to exit traps. Therefore, ghost fishing by these traps was not considered a problem for Hawaiian slipper and spiny lobsters.

Parrish, F. A., and T. K. Kazama. 1992. Evaluation of Ghost Fishing in the Hawaiian Lobster Fishery. Fish. Bull., U.S. 90:720-725.

d. Effect of persistent marine debris on juvenile pelagic sea turtles (continued)
\$ 38.5K

Funds for this task provided continued research on the effects of marine debris on juvenile sea turtles. The study defines the little known juvenile sea turtle populations and determines the extent to which marine debris has a negative effect on the turtles within these habitats. Primary investigation areas will be the western Atlantic (along Florida beaches in cooperation with the Florida Department of Natural Resources) and in the Azores, where a population of pelagic loggerhead turtles has recently been discovered.

Status: This is a continuing project. An interim report is available from the MERP office:

Bolten, A. B., and K. A. Bjorndal. 1991. Effect of Marine Debris on Juvenile Pelagic Sea Turtles. 41 p.

e. Juvenile male fur seal survivorship and entanglement in marine debris (continued)
\$25.0K

Entanglement has been suggested to have contributed to the northern fur seal population decline since the late 1960s. This task continued the evaluation of entanglement rates and survivorship among juvenile male fur seals of the Pribilof Islands population.

In the final year of this study, work continued toward the testing of two hypotheses: 1) the mortality rate for entangled juvenile male fur seals is the same for entangled juvenile males, and 2) the current rate of observed on-land entanglement is unchanged in recent years.

Status: Work on this project was completed during summer 1991. The final report is available from the MERP office:

Fowler, C. W., R. Ream, B. Robson and M. Kiyota. 1992. Entanglement Studies, St. Paul Island, 1991 Juvenile Male Northern Fur Seals. AFSC Processed Report 92-07. 45 p.

f. North Pacific fisheries observer debris data collection
\$ 28.0K

Attempts to develop no-cost observer data collection and archiving of marine debris information were not successful. During FY 91, the NMFS placed up to 600 observers in the North Pacific under three separate programs. These observers were not systematically gathering data on the distribution and density of the types of marine debris. Funds for this task will provide for the collection, evaluation, and reporting of marine debris data collected by observers at sea.

Status: This is a continuing project. Annual reports are available from the MERP office.

4. MANAGEMENT

a. Program management \$ 75.4K

Funds allocated to this task support the office of the MERP manager. The manager carries out the annual program plan for MERP and represents NMFS/NOAA on marine debris issues during conferences and meetings with colleagues, constituents and the general public.

Status: This is a continuing task. In addition to effectively running the program, MERP management gave a number of presentations on persistent marine debris during national and international meetings, to educators and students and recreational and commercial fishermen. While these presentations were not published, discussion papers are available from the MERP office:

Coe, J. M. 1990. Discussion Paper on Management Options to Control Marine Mammal Mortality in Passive Fishing Gear. Unpublished manuscript. 10 p.
(Submitted during the IWC Workshop on Mortality of Cetaceans in Passive Fishing Nets and Traps, La Jolla, California, October, 1990).

Coe, J. M. 1990. Discussion Paper on Persistent Marine Debris. Unpublished manuscript. 4 p.
(Prepared for Asia-Pacific Economic Cooperation: Experts' Workshop on Marine Resource Conservation, Vancouver, B.C., November, 1990).

FUNDING PLAN FOR FISCAL YEAR 1992
ENTANGLEMENT PROGRAM TASKS

FISCAL YEAR 1992 APPROPRIATION		\$685.8K
TASK NO.	TASK TITLE	FUNDING LEVEL
1.	EDUCATION AND PUBLIC AWARENESS	
a.	Marine Debris Information Offices, Transition (10/1/91 - 4/30/92)	\$ 96.2K
b.	Marine Debris Information Offices, Year 1 of 5-Year Option Program (5/1/92 - 4/30/93)	\$140.0K
c.	Distribution of MARPOL Information Packets (continued)	\$ 8.0K
d.	North Pacific Marine Debris Awareness Campaign (continued)	\$ 8.8K
e.	Smithsonian Education Initiatives	\$ 0.5K
f.	Marine Debris Outreach Campaign in the Gulf of Mexico and Wider Caribbean	\$ 50.0K
2.	MITIGATION	
a.	National Coastal Cleanup Campaign (continued)	\$ 61.5K
b.	Debris Removal From Hawaiian Monk Seal Beaches (continued)	\$ 20.0K
c.	National Research Council Marine Board Study	\$ 32.5K
d.	Economic Aspects of Marine Debris (continued)	\$ 67.6K
e.	International Promotion of Annex V Ratification and Implementation	\$ 5.0K
f.	Review of State Actions Toward Compliance With MARPOL V	\$ 0.5K

3. IMPACTS RESEARCH AND MONITORING

- a. Surveys of Entangling Debris on Alaska Beaches (continued) \$ 30.0K
- b. National Seashore Marine Debris Survey Program (continued) \$ 37.1K
- c. Fisheries Observer Marine Debris Project (continued) \$ 16.0K
- d. Effect of Persistent Marine Debris on Juvenile, Pelagic Sea Turtles in the Northeast Atlantic (continued) \$ 40.5K
- e. New Sampling Methodology for Capturing Pelagic Juvenile Marine Turtles in Surface Convergence Zones to Assess the Impact of Marine Debris \$ 25.0K
- f. Disentanglement of Large Whales in the S. Gulf of Maine \$ 5.9K

4. MANAGEMENT

- a. Program Management \$ 60.8K

FISCAL YEAR 1992 ACTIVITIES TO ADDRESS
PROBLEMS ASSOCIATED WITH MARINE DEBRIS

1. EDUCATION AND PUBLIC AWARENESS

- a. Marine debris information offices, transition
(10/1/91 - 4/30/92) \$ 96.2K

These offices provide the mechanisms through which information and materials on the marine debris problem and its solutions are distributed. Offices are located in Washington, D.C., and San Francisco, California. These offices distribute educational and informational materials nationwide to industry and the general public.

Status: This program has been overwhelmingly successful in the quantity and quality of marine debris education material delivered to the public. Activities include the distribution of information packets, providing materials for the print and electronic media, and for educators and others conducting presentations, seminars and briefings. The existing contract was extended to provide fiscal year overlap for the program while the new 5-year contract was completed and awarded.

A final report summarizing activities for FY 91 and the extension period was prepared by the Center for Marine Conservation (CMC) and is available from the MERP manager.

- b. Marine debris information offices, year 1 of
5-year option program \$140.0K

The success of the Marine Debris Information Offices prompted the MERP management to seek to continue their operation. The original contract with CMC was extended to allow fiscal year overlap and to allow adequate time for start-up of the new contract. The MERP management completed a solicitation for a 5-year contract (1 year plus 4 option years based upon performance) so that the MDIOs could operate long-term. The new contract was awarded to CMC and went into effect May 1, 1992.

A final report for the period May 1, 1992 - April 30, 1993 was prepared by the contractor and is available from the MERP manager.

Status: This project continues.

c. Distribution of MARPOL Annex V information to vessel operators using existing U.S. Coast Guard networks \$ 8.0K

The MERP has occasionally received assistance from the U.S. Coast Guard in distributing information on the impacts of persistent marine debris. These efforts have principally been through the distribution of brochures during "Safe Boating Week."

In FY 91 the MERP supplied the national U.S. Coast Guard Auxiliary with information placards and brochures as part of a "MARPOL Information Kit" for distribution to boaters through the Auxiliary's courtesy inspection program. This effort effectively utilized an existing network directly related to boaters. The next step in this effort was to expand the distribution of marine debris materials through other programs operated by the U.S. Coast Guard and the U.S. Coast Guard Auxiliary, including mandatory vessel inspection programs and basic sailing, boating and seamanship classes. The MERP supplied 100,000 brochures and 50,000 MARPOL placards to meet this need and to supplement the distribution effort begun in FY 91.

Status: This project is an on-going cooperative effort between NOAA and the U.S. Coast Guard.

d. Marine debris awareness campaign for the North Pacific (continued) \$ 8.8K

A primary objective of the 1991 Hawaii Ocean Resources Management Plan placed high priority on protecting the environmental quality of Hawaii's coastal waters. To help achieve this goal, Sea Grant was asked to provide assistance to state educational agencies.

In 1991, the MERP provided funds through the National Sea Grant College Program to the University of Hawaii (UH) Sea Grant College Program to incorporate marine debris education projects into their statewide public outreach programs. Continued funding enabled UH Sea Grant to expand these efforts into the Pacific Islands Network (PIN) nations, including American Samoa, the Commonwealth of the Northern Marianas Islands, the Federated States of Micronesia, Palau and Guam.

Status: This project continues.

e. Smithsonian education initiatives \$ 0.5K

The marine debris education initiative within MERP has produced, or cooperated in the production of, a wide range of

educational materials for audiences of all types. One important aspect of the initiative has been to utilize existing networks to promote public awareness of the marine debris problem and its solutions. Development of a portable display to be included with the Smithsonian Institution's traveling exhibit about the oceans was deemed to be an excellent addition to the public awareness initiative.

Status: This project was never approved by the Smithsonian Institution's Chief of Special Exhibits and was abandoned.

f. Marine debris outreach campaign in the Gulf of Mexico and Wider Caribbean **\$ 50.0K**

Under the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), areas of the world's oceans that have unique oceanographic features, environmental conditions or traffic characteristics can be designated as Special Areas. In November 1990, the Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO), agreed in principle to Special Area designation for the Wider Caribbean Region, which includes the Gulf of Mexico, under MARPOL Annex V. With Special Area designation, not only must ships operating in the region abide with what are essentially zero discharge regulations (with the exception of food wastes that may be discharged no less than 12 nautical miles from nearest land), but party nations bordering a Special Area must ensure that adequate port reception facilities to handle these wastes are available.

Since Special Area designation will have a direct impact on U.S. states and territories, the MERP decided to extend the marine debris public awareness campaign into the Caribbean Region. To develop a strategy for conducting this type activity in the region and build support for the Special Area designation, the MERP entered into a cooperative agreement with the Intergovernmental Oceanographic Commission Caribbean Subcommission (IOCARIBE). The MERP assisted with funding and acted in an advisory capacity while IOCARIBE had direct responsibility for development and implementation. IOCARIBE contracted with the Center for Marine Conservation for assistance in developing the education strategy which was expected to be ready for review and implementation in late 1993.

Status: This project continues.

2. MITIGATION

a. National coastal cleanup campaign **\$ 61.5K**

This task provides partial funding to continue the established annual National Coastal Cleanup Campaign held during COASTWEEKS. The MERP and EPA cooperate in providing funds for this activity to promote national public awareness of the marine debris problem and assist in the cleanup and prevention of coastal and shoreline debris.

Status: This project continues. Annual Reports are available from the Center for Marine Conservation, 1725 DeSales Street, NW, Suite 500, Washington, D.C. 20036, (202) 429-5609.

b. Debris removal from Hawaiian monk seal beaches **\$ 20.0K**

This task provides funding assistance to the research teams working to understand and protect the highly endangered Hawaiian monk seal. In the Northwest Hawaiian Islands, these teams make annual visits to monk seal hauling and pupping beaches to gather, catalog and destroy all of the entangling material that has come ashore.

Status: This project continues. Periodic reports are available from the MERP office.

c. National research council marine board study of U.S. implementation of MARPOL Annex V **\$ 32.5K**

As a result of discussions with the U.S. Maritime Administration, EPA, NOAA, U.S. Coast Guard, U.S. Navy and Marine Mammal Commission, the National Research Council's Marine Board proposed to convene the Committee on Shipborne Wastes to conduct a 2-year study of U.S. implementation of, and compliance with, MARPOL Annex V. The committee would examine the roles and responsibilities of government and industry, waste management strategies, and available and developing technologies and capabilities to determine the level of implementation and compliance. Their major task will then be to address the strategic planning needed to enable full compliance and develop a long-range implementation strategy to enable the maritime community to adopt the best vessel waste management practices to make MARPOL V an effective pollution prevention regime.

The agencies listed above will cooperate in the funding of this study and will provide agency liaisons to the Committee.

Status: This is planned as a 2-year study, with the final report due in 1995.

d. Economic aspects of marine debris**\$ 67.6K**

This task continues a competitive research program administered through the National Sea Grant Office to address the economic aspects of marine debris as outlined by the Economics Working Group at the Second International Conference on Marine Debris in 1989. This research addresses the economics of public policies to reduce marine debris, regulatory issues, alternative disposal options, impacts on marine resources and impacts on resource-dependent industries.

Status: This is the final year for this research by K.E. McConnell, University of Maryland; J.G. Sutinen, University of Rhode Island; and J. Kirkley, Virginia Institute of Marine Sciences. Results will be presented in a plenary session at the Third International Conference on Marine Debris in 1994.

McConnell, K. E., J. Kirkley and J. G. Sutinen. In prep. An Economic Primer on Marine Debris. Paper presented in plenary at the Third International Conference on Marine Debris, 1994.

Sutinen, J. G. In prep. A Socioeconomic Theory of Controlling Marine Debris. Paper presented in plenary at Third International Conference on Marine Debris, 1994.

Zhang, X., and V. K. Smith. In prep. Measuring the Total Value of Marine Debris Control for Coastal Waters. Paper presented in plenary at the Third International Conference on Marine Debris, 1994.

e. International promotion of Annex V ratification and implementation**\$ 5.0K**

The MERP management will undertake, where feasible, promotion of the ratification and implementation of MARPOL Annex V by all nations, giving particular attention to those whose wastes directly affect U.S. waters and Caribbean countries. Such promotion may be expected to include the development of networks and cooperation with government organizations, agencies and associations to raise the issue of marine debris and articulate rationale and methods for its solution, which will necessarily include foreign travel.

Status: This task will continue indefinitely. MERP staff traveled to Belize, Mexico and Venezuela to attend and address meetings and act as panel chair in support of Caribbean initiatives for implementation of MARPOL Annex V.

Clary, J. C. Overview of NOAA's Marine Entanglement Research Program. Paper presented at the Second World Congress on Tourism for the Environment, 1992. 11 p.

f. Review of state actions toward compliance with MARPOL V requirements \$ 0.5K

In order to further protect coastal resources from degradation by marine debris, some coastal states have enacted, or are planning, legislation related to Annex V. Although Federal law supercedes any state laws in this matter, some state-sponsored legislation may go beyond Federal statutes, resulting in unenforceable state law and/or confusion about Federal laws. MERP personnel will monitor state actions to determine compatibility with the Federal law and the U.S. Coast Guard's ability to enforce. Information will be shared with concerned parties both inside and outside the marine debris network.

Status: This work is on-going.

3. IMPACTS RESEARCH AND MONITORING

a. Surveys of entangling debris on Alaska beaches \$ 30.0K

This task continues the collection of data to help determine the effectiveness of MARPOL V. Baseline beaches near Yakutat and on Middleton and Kayak Islands will continue to be monitored and additional survey areas will be established in the Bering Sea and Southeast Alaska. If feasible, an aerial survey of one baseline beach will be conducted.

Status: This is a continuing project. Periodic reports are available from the MERP office.

Johnson, S. W. 1992. Fixed-wing Aerial Photography Surveys of Plastic Debris on an Alaskan Beach. AFSC Processed Report 92-04. 8 p.

b. National seashore marine debris survey program \$ 37.1K

Using the survey methods developed in the Alaska surveys, a national sampling system was established in 1989 in cooperation with the National Park Service (NPS). Under this program, eight national park beach sites were selected to be periodically monitored for marine debris. The data collected will be used to systematically evaluate the sources, amounts and distributional dynamics of seaborne debris in the various regions of the United States. These data differ from those collected by voluntary beach cleanups because the scientific methods used will allow estimation of debris loading with time. This year, two additional sites, the Virgin Islands National

Park and Fort Jefferson National Monument, were added. Both are significant index sites for the Gulf of Mexico and Wider Caribbean Region.

Status: MERP continues to cooperate with EPA and NPS in this work. The Gulf of Mexico survey sites began sharing their data with the IOC/UNEP CARIPOL program that monitors marine pollution in the Caribbean. This database is housed in NOS/OAD in Washington, D.C. Annual reports are available from the MERP office.

Cole, C. A., W. P. Gregg, D. V. Richards, and D. A. Manski. 1992. Annual Report of National Park Marine Debris Monitoring Program: 1991 Marine Debris Surveys with Summary of Data from 1988 to 1991. Technical Report NPS/NRWV/NRTR-92/10. 56 p.

c. North Pacific fisheries observer debris data collection
\$ 16.0K

Attempts to establish no-cost observer data collection and archiving of marine debris information have been unsuccessful. With the anticipated placement by NMFS of up to 600 observers on fishing vessels working in the North Pacific, this is a missed opportunity that can be resolved with a minimal amount of funding. This task will provide funds for collection, evaluation and reporting of marine debris data by observers at sea.

Status: Work on this task continues. Periodic reports are available from the MERP office.

d. Effect of persistent marine debris on juvenile, pelagic sea turtles
\$ 40.5K

This task will provide funds for continued research on the effects of marine debris on juvenile sea turtles. The study defines the little-known juvenile sea turtle populations and habitats and determines the adverse effects of marine debris on these populations. This year, the principal investigators will also initiate work to quantify the sub-lethal effects of ingestion of debris on rate of nutrient uptake in sea turtles.

Status: Work on this task continues. Reports and related publications are available from the MERP office.

Bolten, A. B., and K. A. Bjorndal. 1992. Effect of Marine Debris on Juvenile, Pelagic Sea Turtles. International Journal of Sustainable Development 1:92-98.

Bolten, A. B., E. R. Jacobson, and K. A. Bjorndal. 1992. Effects of Anticoagulant and Autoanalyzer on Blood Chemical Values of Loggerhead Sea Turtles (Caretta caretta). American Journal of Veterinary Research 53:2224-2227.

Bolten, A. B., H. R. Martins, K. A. Bjorndal, M. Cocco, and G. Gerosa. 1992. Caretta caretta (Loggerhead) Pelagic Movement and Growth. Herpetological Review 23:116.

Bolten, A. B., J. C. Santana, and K. A. Bjorndal. 1992. TransAtlantic Crossing by a Loggerhead Turtle. Marine Turtle Newsletter 59:7-8.

- e. New sampling methodology for capturing pelagic, juvenile marine turtles in surface convergence zones to assess the impact of marine debris** \$ 25.0K

International efforts to recover and effectively manage threatened and endangered species of sea turtles have been severely hampered by the paucity of knowledge on the pelagic stage of development of all species. With very few and limited exceptions, there have been no successful efforts to locate and capture them to facilitate research. This is due in part to scarcity of vessel sightings, leading some to believe that the pelagic habitats of juvenile turtles just have not been located. Others believe that the turtles concentrate along driftlines but dive upon sensing the presence of a vessel, thus making a sighting impossible. This project would develop and deploy new gear types designed to overcome the avoidance capabilities of juvenile marine turtles for surface-towed sampling gear and use directed samples taken inside and outside visually apparent driftlines to assess the presence of marine debris and potential harm to animals foraging in these zones.

Status: This task was cancelled after FY 92 by the Ad Hoc Committee on Marine Entanglement due to budget cuts.

- f. Disentanglement of large whales in the southern Gulf of Maine** \$ 5.9K

This task would provide funds to a private non-profit organization for the purchase of a badly needed inflatable boat. This craft will replace an unserviceable boat and allow the organization to continue whale disentanglement work in the Gulf of Maine which has been authorized by the NMFS.

Status: The Ad Hoc Committee on Marine Entanglement approved this funding contingent upon the approval of the Humpback

Whale Recovery Team. The Recovery Team approved and the funds were released.

4. MANAGEMENT

a. Program management

\$ 60.8K

Funds allocated to this task support the office of the MERP manager. The manager carries out the annual program plan for MERP as well as representing NMFS/NOAA on marine debris issues during conferences and meetings with colleagues, constituents and the general public.

Status: This is a continuing task. In addition to conducting routine program business, the MERP staff was able to effect interagency agreements with the U.S. Coast Guard and EPA Gulf of Mexico Program and acted as administrator for funds received from both agencies, as well as from the U.S. Navy and the EPA Office of Water.

During the summer 1992, MERP staff established and convened an international Steering Committee for the Third International Conference on Marine Debris and awarded a contract for the Conference Coordinator.

FUNDING PLAN FOR FISCAL YEAR 1993
ENTANGLEMENT PROGRAM TASKS

FISCAL YEAR 1993 APPROPRIATION		\$638.8K
TASK NO.	TASK TITLE	FUNDING LEVEL
1.	EDUCATION AND PUBLIC AWARENESS	
	a. Marine Debris Information Offices (continued)	\$ 60.0K
	b. Marine Debris Outreach Campaign in the Gulf of Mexico and Wider Caribbean (continued)	\$ 50.0K
	c. Conference Coordinator for the Third International Conference on Marine Debris	\$ 28.5K
2.	MITIGATION	
	a. National Coastal Cleanup Campaign (continued)	\$ 55.0K
	b. Debris Removal From Hawaiian Monk Seal Beaches (continued)	\$ 20.0K
	c. National Research Council Marine Board Study (continued)	\$ 32.5K
	d. International Promotion of Annex V Ratification and Implementation (continued)	\$ 5.0K
	e. Development of Best Management Practices for Marina Pollution Prevention Plans	\$ 30.0K
	f. Revision of the Port Reception Facility Section of the IMO Guidelines for the Implementation of MARPOL Annex V (continued)	\$ 25.0K
3.	IMPACTS RESEARCH AND MONITORING	
	a. Surveys of Entangling Debris on Alaska Beaches (continued)	\$ 35.0K
	b. National Seashore Marine Debris Survey Program (continued)	\$ 37.1K
	c. Fisheries Observer Marine Debris Project (continued)	\$ 16.0K

- d. Effect of Persistent Marine Debris on Juvenile,
Pelagic Sea Turtles in the Northeast Atlantic
(continued) \$ 40.5K
 - e. Statistical Assessment of Marine Debris Monitoring
Systems \$ 30.0K
 - f. Incidence of Plastics in Seabirds from the Tropical
Pacific, 1984-91: Relation with Distribution of Species,
Sex, Age, Season, Year \$ 12.0K
4. MANAGEMENT
- a. Program Management (continued) \$ 96.7K

FISCAL YEAR 1993 ACTIVITIES TO ADDRESS
PROBLEMS ASSOCIATED WITH MARINE DEBRIS

1. EDUCATION AND PUBLIC AWARENESS

- a. Marine debris information office (year 2 of 5-year option) \$ 60.0K

The MDIOs continued to be extremely successful in promoting public awareness, prompting the MERP manager to exercise the first option year on the new contract. Informational materials are regularly updated and new ones added to existing inventories. Specialized information packets were developed to target cruise passengers and the cruise industry.

Status: Work under this task continues. Annual reports are available from the MERP office.

- b. Marine debris outreach campaign in the Gulf of Mexico and Wider Caribbean \$ 0.0K

This task would provide funds to continue the work begun during FY 92.

Status: Due to the late start-up of this project in FY 92 and uncertainties in the organizational structure of IOCARIBE, this task was ultimately not funded in FY 93, and the funds were diverted to other MERP projects.

- c. Conference coordinator for the Third International Conference on Marine Debris \$ 28.5K

In order to begin planning for the Third International Conference on Marine Debris, the MERP manager proposed to contract a conference coordinator to handle all planning, organizing and managing the conduct of the Conference. The MERP manager proposed to convene the Conference in Miami, Florida, to attract a large Caribbean delegation and a larger European participation than the first two conferences, which were convened in Honolulu. Because of the proposed venue and the international nature of the Conference, it was essential that the successful bidder have bilingual (English and Spanish) capabilities and be experienced in dealing with the international scientific community. The contract was awarded to Bregman and Company, Incorporated, of Bethesda, Maryland.

Status: Work under this task began in early FY 93 and will continue until the business of conducting the Conference has been completed, probably in late FY 94 or early FY 95.

2. MITIGATION

a. National coastal cleanup campaign \$ 55.0K

This task provides partial funding to continue the established annual National Coastal Cleanup Campaign held during COASTWEEKS. The MERP and EPA cooperate in providing funds for this activity to promote national public awareness of the marine debris problem and to assist in the cleanup and prevention of coastal and shoreline debris.

Status: This project continues. Annual reports are available from the Center for Marine Conservation, 1725 DeSales Street, NW, Suite 500, Washington, D.C. 20036, (202) 429-5609.

b. Debris removal from Hawaiian monk seal beaches \$ 20.0K

This task provides funding assistance to the research teams working to understand and protect the highly endangered Hawaiian monk seal. In the Northwest Hawaiian Islands, these teams make annual visits to monk seal hauling and pupping beaches to gather, catalog and destroy all of the entangling material that has come ashore.

Status: Work under this task continues. Periodic reports are available from the MERP office.

c. National research council marine board study of U.S. implementation of MARPOL Annex V \$ 42.5K

This task provided funds for the second year of the planned 2-year Marine Board study of U.S. implementation of MARPOL Annex V. Although the planned MERP contribution to this project was \$32.5K, in late FY 93, it became obvious that a higher level of funding was needed to complete the work and the MERP contributed an additional \$10.0K.

Status: The Marine Board report is due out in 1995.

d. International promotion of Annex V ratification and implementation \$ 5.0K

The MERP management will undertake, where feasible, promotion of the ratification and implementation of MARPOL Annex V by all nations, giving particular attention to those whose wastes directly affect U.S. waters and to the Caribbean countries. Such promotion may be expected to include the development of networks and cooperation with government organizations, agencies and associations to raise international awareness of the marine debris problem and articulate rationale and methods for its solution, which may necessitate foreign travel.

Status: This task will continue indefinitely.

**e. Development of best management practices for marina
pollution prevention plans** **\$ 30.0K**

This task will provide funds to the Sea Grant network to develop guidelines to assist the marina industry in developing nationally applicable Marina Pollution Prevention Plans (MPPP). The Coastal Zone Act Reauthorization Amendments of 1990 established a new national program to provide solutions to problems caused by nonpoint pollution of the Nation's waters. The EPA has identified marinas as one source of nonpoint pollution. The industry expressed a desire to be proactive in designing MPPPs and requested assistance from Sea Grant's Marine Advisory Service. The Sea Grant network will assist the International Marina Institute, NOAA, EPA and state marina trade associations to develop nationally applicable, best economically achievable measures for solid waste handling, recycling and boater and public education for the marina industry.

Status: In cooperation with the International Marina Institute, Sea Grant organized and convened, in March 1993, a meeting of representatives from the boating and marina industries, academia, government and environmental organizations to develop strategies to facilitate compliance with guidelines and regulations designed to protect and improve the quality of the marine environment. The framework for the 3-year Clean Marina Program resulted from this meeting. The drafting of marina pollution prevention plans was among the objectives of the program and are currently being developed.

**f. Revision of the port reception facility section of the
IMO guidelines for the implementation of MARPOL Annex V** **\$ 25.0K**

In FY 91, the MERP contracted with A.T. Kearney, Inc., to develop revised guidelines for port reception facilities of MARPOL Annex V wastes (garbage). The original schedule for completion was May 1992. However, the Marine Environment Protection Committee (MEPC) of the IMO, which administers the development of guidelines, was unable to address the subject fully at its 30th and 31st meetings. In anticipation of contractor participation in at least two additional meetings of the MEPC in order to finalize this work, the period of performance was extended to October 1, 1993 and the funding increased by the present level.

Status: Document has been completed and is still being considered for approval by the MEPC.

3. IMPACTS RESEARCH AND MONITORING**a. Surveys of entangling debris on Alaska beaches \$ 39.0K**

This task continues the collection of data to help determine the effectiveness of MARPOL V. Use of forward-motion compensating cameras in preliminary aerial work conducted in 1992 appeared to offer some promise in identification of marine debris. Aerial surveys will be attempted again during 1993.

Status: This task continues. Periodic reports are available from the MERP office.

Johnson, S. W. 1993. Entanglement and Other Plastic Debris on Alaskan Beaches, 1990-92. AFSC Processed Report 93-02. 12 p.

b. National seashore marine debris survey program \$ 66.1K

Fiscal year 1993 was the final year of the interagency agreement between NMFS and NPS that facilitated the work under this task. Funding was increased to allow for data collection through the end of the first quarter of FY 94. The data collected during this 5-year effort will be used to assist in designing the national marine debris monitoring program. A portion of the funds were also used to increase the frequency of sampling at Padre Island National Seashore to help identify point sources of pollution. Data gathered indicated that specific debris items could be related to specific point sources. Results of this investigation culminated in a multi-Federal agency law enforcement operation to document MARPOL Annex V violations.

Status: Work under this task is complete. Reports are available from the MERP office. The annual report for 1992 will be ready for distribution in spring 1995; the final report on this work is undergoing review in NPS and should be ready for distribution by late 1995.

Miller, J. E. 1994. Marine Debris Point Source Investigation, Padre Island National Seashore, Texas. In prep. Presented in plenary at the Third International Conference on Marine Debris, 1994.

c. North Pacific fisheries observer debris data collection
\$ 16.0K

This task will continue to provide funds to assist in marine debris data collection, evaluation and reporting by observers on fishing vessels at sea.

Status: Work under this task continues. Periodic reports are available from the MERP office.

d. Effect of persistent marine debris on juvenile, pelagic sea turtles in the northeast Atlantic
\$ 40.5K

This task will provide funds for continued research on the effects of marine debris on juvenile sea turtles. In addition to studies of habitat and population, adverse effects of marine debris and sublethal effects of ingestion of marine debris, the research will also attempt to quantify the stress hormone syndrome in sea turtles as it relates to adverse effects of marine debris.

Status: Work on this task continues. Reports and related publications are available from the MERP office.

Bolten, A. B., K. A. Bjorndal, and H. R. Martins. 1993. Life History Model for the Loggerhead Sea Turtle (Caretta caretta) Population in the Atlantic: Potential Impacts of a Longline Fishery. In G. H. Balazs and S. G. Pooley (eds.), Research Plan to Assess Marine Turtle Hooking Mortality: Results of an Expert Workshop Held in Honolulu, Hawaii, November 16-18, 1993, p 48-54. NMFS/SWFC Administrative Report H-93-18.

Bolten, A. B., H. R. Martins, K. A. Bjorndal, and J. Gordon. 1993. Size Distribution of Pelagic-Stage Sea Turtles (Caretta caretta) in Waters Around the Azores and Madeira. Arquipelago 11A:49-54.

Gregory, L. 1993. Capture Stress in the Loggerhead Sea Turtle (Caretta caretta). M.S. thesis, University of Florida, Gainesville.

e. Statistical assessment of marine debris monitoring systems
\$ 30.0K

NMFS, EPA, NPS, private organizations, state and foreign governments and international organizations have been involved in marine debris monitoring activities for up to 10 years. Marine debris databases are potentially available from all over the world. Questions regarding efficiency of methods, statistical validity and interpretation and utility of these data have been, and continue to be, raised.

This task will provide funds for a statistician, or team of statisticians, to assemble and analyze all available marine debris survey data and recommend future survey objectives, strategies and, where appropriate, methods.

Status: Work under this task continued through FY 94.

f. Incidence of plastics in seabirds from the tropical Pacific, 1984-91: relation with distribution of species, sex, age, season, year **\$ 12.0K**

This task provided funds to the Point Reyes Bird Observatory for the analysis and comparison of marine debris ingestion data collected ancillary to other studies funded by other organizations. The work allowed incorporation of data into existing databases, statistical comparisons involving marine debris occurrence/ingestion and the preparation of the findings for formal publication. This also provided valuable marine debris information for the offshore, equatorial region of the eastern tropical Pacific.

Status: Work under this task was completed and a paper presented in plenary at the Third International Conference on Marine Debris.

Robards, M. D., D. W. Laist, and P. L. Lutz.
In prep. The Hazard of Ocean Debris Ingestion - Real or Only Apparent? Paper presented in plenary at the Third International Conference on Marine Debris, 1994.

4. MANAGEMENT

a. Program management (continued) **\$ 96.7K**

Funds allocated to this task support the office of the MERP manager. The manager carries out the annual program plan for MERP as well as representing NMFS/NOAA on marine debris issues during conferences and meetings with colleagues, constituents and the general public.

Status: Work under this task continues. Staff continued to administer funds for other agencies under various interagency agreements. Planning for the Third International Conference on Marine Debris progressed with the naming of Working Group Chairs, paper and poster solicitations, sponsor solicitations and announcement design, printing and distribution. The MERP staff was able to secure a very important seat on the EPA Gulf of Mexico Program's Committee on Marine Debris, thus enabling MERP to become more active in the Gulf region.

FUNDING PLAN FOR FISCAL YEAR 1994
ENTANGLEMENT PROGRAM TASKS

FISCAL YEAR 1994 APPROPRIATION		\$605.9K
TASK NO.	TASK TITLE	FUNDING LEVEL
1. EDUCATION AND PUBLIC AWARENESS		
a.	Marine Debris Information Offices (continued)	\$ 61.6K
b.	Marine Debris Outreach Campaign in the Gulf of Mexico and Wider Caribbean (continued)	\$ 50.0K
c.	Conference Coordinator for the Third International Conference on Marine Debris (continued)	\$ 30.0K
d.	Pacific Islands Marine Debris Campaign	\$ 11.0K
e.	3rd Caribbean Marine Debris Workshop	\$ 20.0K
f.	Third International Conference on Marine Debris Publications	\$ 35.0K
2. MITIGATION		
a.	National Coastal Cleanup Campaign (continued)	\$ 55.0K
b.	Debris Removal from Hawaiian Monk Seal Beaches (continued)	\$ 25.0K
c.	International Promotion of Annex V Ratification and Implementation (continued)	\$ 15.0K
d.	Net Collection and Recycling: North Carolina, South Carolina and Georgia	\$ 37.8K
e.	Gulf of Maine Program Port Project (Year 1)	\$ 16.5K
f.	Zero Solid Waste Discharge Guidelines for the NOAA Fleet (FY 93 Funds)	\$ 15.0K
3. IMPACTS RESEARCH AND MONITORING		
a.	Surveys of Entangling Debris on Alaska Beaches (continued)	\$ 35.0K
b.	Fisheries Observer Marine Debris Project (continued)	\$ 16.0K

c.	Effect of Persistent Marine Debris on Juvenile, Pelagic Sea Turtles in the Northeast Atlantic (continued)	\$ 21.3K
d.	National Marine Debris Monitoring Program (continued)	\$ 40.0K
e.	Impacts of Marine Debris on Sea Turtle Populations	\$ 40.0K
f.	Coastal and Upland-Based Sources of Marine Debris (FY 93 Funds)	\$ 10.0K
4.	MANAGEMENT	
a.	Program Management (continued)	\$ 96.7K

FISCAL YEAR 1994 ACTIVITIES TO ADDRESS
PROBLEMS ASSOCIATED WITH MARINE DEBRIS

1. EDUCATION AND PUBLIC AWARENESS

- a. Marine debris information offices (year 3 of 5-year option) \$ 61.6K

The continued success of the MDIOs prompted the MERP manager to exercise the second option year of the 5-year contract with the Center for Marine Conservation. Information packets continue to be updated periodically and new materials added to existing inventories.

Status: Work under this task continues. Quarterly and annual reports are available from the MERP office.

- b. Marine debris education program for the Wider Caribbean (continued) \$ 50.0K

This task provided funds to continue work begun in FY 92. Due to unexpected delays and instability in the IOCARIBE organizational structure, FY 93 funds were not used to support continuation of this task. The education plan has been reviewed and approved and funds transferred to the IOCARIBE Secretariat to implement the program. The EPA Gulf of Mexico Program cooperated with the MERP in funding this task.

Status: Implementation is proceeding; work under, and funding for, this task are expected to continue at least through FY 95.

- c. Conference coordinator for the Third International Conference on Marine Debris (continued) \$ 30.0K

The Third International Conference on Marine Debris was convened in Miami, FL, May 8-13, 1994, and attended by 175 people representing 26 countries. The conference coordinator made all logistical arrangements, banking arrangements for handling of private funds and contributions, foreign travel arrangements and other details of conference management.

Status: Work under this contract has been completed and the contract closed.

- d. Pacific Islands marine debris campaign \$ 11.0K

This task, funded by the MERP in FY 91 and 92, was originally planned for Hawaii. During 1992, the effort was expanded to include the Pacific Islands, through a cooperative effort with University of Hawaii Sea Grant and the Pacific Islands Network

(PIN), a consortium of U.S. Federal agencies working together with U.S.-affiliated Pacific Island governments and non-government organizations. The PIN is charged with providing technical information and assistance related to coastal and marine issues.

Status: A final report on this project will be available in early 1995.

e. 3rd Caribbean marine debris workshop \$ 20.0K

The Marine Debris Action Plan for the Caribbean developed at the 2nd Caribbean Marine Debris Workshop in Merida, Mexico, in August 1992 called for the convening of the 3rd Caribbean Marine Debris Workshop to emphasize pollution by land-based sources. The intent of the workshop was to assemble an audience to include port management, solid waste management, health officials, coastal resource managers and educators from the 29 Wider Caribbean countries to preserve and strengthen the Caribbean marine debris network. The MERP and EPAs Gulf of Mexico Program cooperated in funding this task.

Status: Workshop convened in Nassau, Bahamas, in January 1994. The final report is due out in late 1994. Tentative plans were made for the 4th Caribbean Marine Debris Workshop for spring 1995.

Intergovernmental Oceanographic Commission. 1994.
Marine Debris Action Plan for the Caribbean. UNESCO #41.
30 p.

f. TICMD publications \$ 35.0K

During the early planning stages for the Third International Conference on Marine Debris (TICMD), the Steering Committee agreed that the Conference publications would be published in three volumes:

- 1) Glossy Conference Summary - This will be a high-quality, photo-art enhanced document summarizing Conference findings and recommendations, including edited versions of the six working group reports.
- 2) Conference Proceedings: Plenary Papers - This volume will constitute the formal proceedings of the Conference and will be published in book format after rigorous review and revision by independent experts.
- 3) Conference Proceedings: Poster Papers and Abstracts - Abstracts and full manuscripts for poster presentations will be compiled and published in the NOAA Technical Memorandum series after peer review and revision.

Status: North Carolina Sea Grant is nearing completion of the summary document, which should be available early in 1995. Both volumes of the proceedings are currently undergoing editorial review.

2. MITIGATION

a. National coastal cleanup campaign \$ 55.0K

The MERP and EPA continue to cooperate in providing funding for continuing this annual event. The National Coastal Cleanup Campaign is held each year during COASTWEEKS and is highly successful both in promoting national public awareness of the marine debris problem and in assisting in the cleanup and prevention of coastal and shoreline debris.

Status: Work under this task continues. Annual reports are available from the Center for Marine Conservation, 1725 DeSales Street, NW, Suite 500, Washington, D.C. 20036, (202) 429-5609.

b. Debris removal from Hawaiian monk seal beaches \$ 25.0K

This is a continuing task that provides funding assistance to the research teams working to understand and protect the highly endangered Hawaiian monk seal. In the Northwest Hawaiian Islands, these teams make annual visits to monk seal hauling and pupping beaches to gather, catalog and destroy all of the entangling material that has come ashore.

Status: This project continues. Periodic reports are available from the MERP office.

c. International promotion of Annex V ratification and implementation \$15.0K

This task provides funds to give the MERP management latitude to work effectively in the international arena when marine debris issues are involved. This involvement is particularly important in the Wider Caribbean Region because of the special area designation of the Caribbean and Gulf of Mexico. However, activities under this task are not limited to the Caribbean Region since MERP management has also been cooperating with IOC, IMO, UNEP and other international agencies on marine debris issues.

Status: Work under this task is expected to continue indefinitely.

d. Net collection/recycling: a feasibility study for North Carolina, South Carolina and Georgia \$ 37.8K

This task utilizes the Sea Grant network to establish state coordinators to devise appropriate strategies for working with commercial fishermen within their respective states for collecting and sorting commercial fishing nets for recycling, and working with existing local solid waste management and recyclers to define the recycling potential of the material. This project intends to capitalize as much as possible on the results of a similar project conducted in 1991-92 by the Pacific States Marine Fisheries Commission in which the recycling of gillnet was investigated.

Status: A final report is due in mid-1995.

e. Marine debris reduction in the Gulf of Maine \$ 16.5K

This is the first year of a 3-year project initiated by the Gulf of Maine Council, a body comprised of public and private officials from New England states and the Maritime Provinces bordering the Gulf of Maine. In 1992, the Council initiated a marine debris reduction effort in Portland, ME, to serve as an example to other ports in the region. This effort evolved into what is now the Portland Harbor Marine Debris Council. This group is working with fishermen and other marine users to build public awareness about the hazards of marine debris and to provide adequate facilities for proper disposal of marine debris on the waterfront. The Gulf of Maine Council wants to implement similar programs in additional fishing ports in the region. This task provides partial funding to assist them in this effort.

Status: The MERP arranged for a grant to the Gulf of Maine Council through the NOAA Coastal Programs Division under the Coastal Zone Management Act. Due to delays in the granting process, funds were not received by the Council until late in FY 94.

f. Zero solid waste discharge guidelines for the NOAA fleet \$ 15.0K

The U.S. ratified MARPOL Annex V in December 1987, and the implementing legislation, the Marine Plastic Pollution Research and Control Act, went into effect in December 1988. While public vessels are exempted from compliance by Annex V, and granted a 5-year grace period by the MPPRCA, NOAA implemented solid waste discharge directives within its fleet shortly after Annex V was ratified. These directives mirrored the regulations set forth in Annex V. In addition to establishing discharge regulations, Annex V also makes provision for special areas, in which, because of unique

oceanographic, environmental or traffic characteristics, all overboard discharge of wastes except comminuted food wastes, is prohibited. Two of these areas, the Antarctic Region and the Wider Caribbean Region, impact the NOAA fleet.

As America's steward of the oceans, NOAA should be setting the example for the world's maritime community and treat all oceans as special areas. With this goal in mind, the MERP provided partial funding for this task to NOAA's Ship Systems Branch to develop these guidelines.

Status: All background work has been completed. The final report and guidelines are in preparation.

Art Anderson Associates. 1994. Zero Solid Waste Discharge Guidelines for the NOAA Fleet. Report prepared under contract 50-DGND-2-00162 to Office of NOAA Corps Operations Ship Systems Branch in cooperation with the NMFS Marine Entanglement Research Program. 139 p.

3. IMPACTS RESEARCH AND MONITORING

a. Surveys of entangling debris on Alaska beaches \$ 35.0K

This task continues the collection of data to help determine the effectiveness of MARPOL Annex V. Surveys indicate that trawl web deposition on Alaskan beaches is decreasing, but continuing surveys are needed to determine the true effectiveness of Annex V.

Status: Work under this task is continuing. Periodic reports are available from the MERP office.

b. North Pacific fisheries observer debris data collection \$ 16.0K

This task will provide continued funding for collection, evaluation and reporting of marine debris data by observers at sea.

Status: Work on this task continues. Periodic reports are available from the MERP office.

Weikart, H. 1994. Summary of Marine Debris Observed from U.S. Fishing Vessels in the Northeast Pacific Ocean and Bering Sea, 1992-1993. Poster presented at Third International Conference on Marine Debris, May 1994.

c. Effect of persistent marine debris on juvenile, pelagic sea turtles in the northeast Atlantic \$ 21.3K

This task will provide funds for continued research on the effects of persistent marine debris on juvenile sea turtles.

Status: Work on this task continues. Reports and related publications are available from the MERP office.

Bjorndal, K. A., A. B. Bolten, J. Gordon, and J. A. Carminas. 1994. Caretta caretta (Loggerhead) Growth and Pelagic Movement. Herpetological Review 25:23-24.

Bjorndal, K. A., A. B. Bolten, and C. J. Lageaux. 1994. Ingestion of Marine Debris by Juvenile Sea Turtles in Coastal Florida Habitats. Bulletin of Marine Pollution 28:154-158.

Bolten, A. B., K. A. Bjorndal, and H. R. Martins. 1994. Biology of Pelagic-Stage Loggerheads in the Atlantic. In K. A. Bjorndal, A. B. Bolten, D. A. Johnson, and P. J. Eliazar (eds.), Proceedings of the 14th Annual Symposium on Sea Turtle Biology and Conservation. NOAA Technical Memorandum NMFS-SEFSC-351.

Bolten, A. B., K. A. Bjorndal, and H. R. Martins. In press. Life History Model for the Loggerhead Sea Turtle (Caretta caretta) in the Atlantic. Proceedings of the First Symposium on the Fauna and Flora of the Atlantic Islands. Museu do Funchal, Madeira, Portugal.

d. National marine debris monitoring program \$ 40.0K

Work under this task continued through FY 94. Preliminary results of data analyses were made available in a poster presentation at the Third International Conference on Marine Debris. A mid-year job change by the lead statistician in this effort slowed work somewhat. The MERP continues to cooperate with EPA, the NPS and other government agencies in this effort.

Status: Work under this task continues. The final report is in review and the program design is being drafted. Cooperators met in early 1995 to review results and consider practical strategies for funding, staffing and implementing the national monitoring program.

Ribic, C. A. 1994. Power Analysis for Beach Surveys of Marine Debris. In prep. 16 p.

Ribic, C. A., C. A. Cole and S. W. Johnson. 1994. Distribution, Abundance and Source of Plastic Debris on Coastal Beaches of the U.S. In Prep. Presented in plenary at the Third International Conference on Marine Debris, 1994.

e. Impacts of marine debris on sea turtle populations **\$ 40.0K**

Work performed under this task will quantify from stranding data the adverse impacts of entanglement and anthropogenic debris on sea turtles by species, size class, geographic area and season and determine the effects of incidental hook and line capture and entanglement of Kemp's ridleys along the upper Texas coast.

Status: The final report will be published as a NOAA Technical Memorandum upon approval by the MERP manager.

f. Coastal and upland-based sources of marine debris **\$ 10.8K**

Under this task, work was done by Louisiana State University Sea Grant to identify land-based sources of marine debris originating in coastal and upland areas. This topic has taken on a strategic significance with the designation of the Wider Caribbean and Gulf of Mexico as a Special Area under MARPOL Annex V. This designation places a huge burden on the 23 less-developed nations of the region and many of the more remote communities along the U.S. Gulf of Mexico. Not only must they provide adequate shoreside reception facilities for vessel wastes that may or may not be discharged, but they are also faced with having to address the larger issue of national and regional solid waste management.

Primarily, this work reviewed and analyzed available information to help characterize the role of coastal and upland sources in the range of marine debris-related problems.

Status: Work under this task was completed and a paper presented in plenary at the Third International Conference on Marine Debris.

Liffmann, M. 1994. Linkages Between Land-Based Sources of Pollution and Marine Debris. In prep. Paper presented in plenary at Third International Conference on Marine Debris, 1994.

4. MANAGEMENT

a. Program management

\$ 96.7K

Funds allocated to this task support the office of the MERP manager. The manager carries out the annual program plan for MERP as well as representing NOAA/NMFS on marine debris issues during conferences and meetings with colleagues, constituents and the general public.

Status: This is a continuing task. In addition to normal program activities, MERP staff planned and convened the Third International Conference on Marine Debris, chaired by the MERP manager. The MERP raised almost \$200K from sponsors to help support the Conference which was attended by 175 people representing 26 countries.

The MERP manager presented the Marine Debris Action Plan of the Wider Caribbean for adoption by the IOC/UNEPCEPOL program for assessment and abatement of marine pollution in the Caribbean. This strategy was adopted for the 1994-95 1996-97 biennia, providing a long-term base for addressing the marine debris problem in the Wider Caribbean Region, which includes the Gulf of Mexico. The MERP manager was also successful in gaining endorsement of the U.S. position in the Summit of the Americas for the marine debris strategy of the Caribbean. This endorsement will help propel the strategy into action in many nations of the area. In addition, the MERP manager successfully cooperated with elements of the IOC to arrange a GIPME-sponsored (Global Investigations of Pollution in the Marine Environment) inter-comparison of marine debris survey methods in the wider Caribbean, a major program objective in the development of regional marine debris monitoring networks.

In addition to editing and coordinating publication of the documents from the Third International Conference on Marine Debris, the MERP manager co-authored a chapter in a textbook on marine mammal issues in cooperation with the U.S. Marine Mammal Commission (publication in 1995) and co-authored the following manuscript which is in press as a NOAA Technical Report:

Wallace, B. and J. M. Coe. 1994. Guidelines for the Provision of Port Reception Facilities Under MARPOL Annex V. NOAA Technical Report (in press).

FUNDING PLAN FOR FISCAL YEAR 1995
ENTANGLEMENT PROGRAM TASKS

FISCAL YEAR 1995 APPROPRIATION		\$624.1K
TASK NO.	TASK TITLE	FUNDING LEVEL
1. EDUCATION AND PUBLIC AWARENESS		
a.	Marine Debris Information Offices (continued)	\$ 90.0K
b.	Marine Debris Outreach Campaign in the Gulf of Mexico and Wider Caribbean	\$ 40.0K
c.	Marine Debris Newsletter (Year 1 of 3)	\$ 69.3K
d.	4th Caribbean Marine Debris Workshop	\$ 20.0K
e.	"Inky " Documentary Video - Cooperative Project with National Aquarium in Baltimore (FY 94 Funds)	\$ 15.0K
2. MITIGATION		
a.	National Coastal Cleanup Campaign (continued)	\$ 55.0K
b.	Debris Removal From Hawaiian Monk Seal Beaches (continued)	\$ 25.0K
c.	International Promotion of Annex V Ratification and Implementation (continued)	\$ 15.0K
d.	Gulf of Maine Program Port Project (continued)	\$ 25.5K
e.	Gulf of Maine Net Recycling (Year 1, FY 94 Funds)	\$ 6.0K
f.	Rural Solid Waste Management Practices (FY 94 Funds)	\$ 10.0K
3. IMPACTS RESEARCH AND MONITORING		
a.	Surveys of Entangling Debris on Alaska Beaches (continued)	\$ 41.0K
b.	Fisheries Observer Marine Debris Project (continued)	\$ 16.0K
c.	Effects of Persistent Marine Debris on Juvenile, Pelagic Sea Turtles in the Northeast Atlantic (continued)	\$ 20.9K

d.	National Marine Debris Monitoring Program (continued)	\$ 40.0K
e.	Marine Debris Monitoring Offshore (FY 94 Funds)	\$ 8.0K
4.	MANAGEMENT	
a.	Program Management	\$107.4K
b.	Program Statistician/Data Manager	\$ 75.0K

FISCAL YEAR 1995 ACTIVITIES TO ADDRESS
PROBLEMS ASSOCIATED WITH MARINE DEBRIS

1. EDUCATION AND PUBLIC AWARENESS

- a. Marine debris information offices (year 4 of 5-year option) \$ 90.0K**

The continued success of the MDIOs prompted the MERP manager to exercise the third option year of the 5-year contract with the Center for Marine Conservation. Information packets continue to be updated periodically and new materials added to existing inventories.

Status: Work under this task continues. Quarterly and annual reports are available from the MERP office.

- b. Marine debris education program for the Wider Caribbean (continued) \$ 40.0K**

These funds will provide continued support for the implementation and expansion of the Wider Caribbean marine debris education program developed by IOCARIBE. The EPA Gulf of Mexico will cooperate with the MERP in the funding of this task.

Status: Work under this task continues.

- c. Marine debris newsletter (year 1 of 3) \$ 69.3K**

The global marine debris community is fragmented. Researchers, cleanup organizations/efforts, managers and affected industries have no common link or mechanism for exchanging information worldwide about research results, innovations, educational efforts or legislation. Other than personal contacts, the only common thread for the marine debris community is the International Conference on Marine Debris, held in 5-year intervals. Five years is too long to wait to get the word out on a new survey method, an innovative educational effort, an industry innovation or regional initiatives. To keep the international marine debris community informed, to build cohesiveness and encourage cooperative efforts, the community needs to exchange information on a regular basis.

Funding under this task will utilize the Sea Grant network to develop, publish and disseminate a quarterly marine debris newsletter. The mailing list will be built from the lists of attendees of the Second and Third International Conference on Marine Debris and expanded. The newsletter will also be available in electronic format via Internet.

Status: Funds have been transferred to the National Sea Grant Office. The first issue is expected in spring 1995.

d. Fourth Caribbean marine debris workshop \$ 20.0K

Three previous workshops have produced a Wider Caribbean Marine Debris Working Group, a Marine Debris Waste Management Action Plan for the Caribbean and a number of on-going projects aimed at implementing the provisions of MARPOL Annex V as well as broader waste management issues. Additionally, a coalition of industry, educators, environmental groups, health organizations and interested persons has begun to coalesce into a network.

At the third workshop, Working Group members recommended that a fourth workshop be convened to preserve and strengthen the Caribbean marine debris network and to further expand the workshop audience. Focus will be on educating the educator to enhance realizing the objective of behavioral modification.

Status: The MERP has utilized the Sea Grant network for funding, organizing and convening the previous three workshops and will do so for the fourth workshop. EPA's Gulf of Mexico Program is a cooperator with the MERP on this task. Funds have been transferred to Sea Grant. The workshop will convene in August 1995 in the Dominican Republic.

e. "Inky" documentary video - cooperative project with the National Aquarium in Baltimore (FY 94 Funds) \$ 15.0K

On Thanksgiving Day, 1993, the U.S. Coast Guard rescued a stranded pygmy sperm whale and delivered it to the National Aquarium in Baltimore. The whale was severely emaciated and weak and was found to have gastrointestinal problems caused by ingesting plastic trash. Aquarium veterinarians and animal care specialists were able to remove the material from the whale's stomach and nurse the animal back to health for eventual release at sea.

NAIB approached the MERP about cooperating with the U.S. Coast Guard and EPA in funding a video documenting the rescue, rehabilitation and release of the animal, to be used in the public awareness campaign against marine debris. The MERP manager determined that such a video could be a powerful tool in the public education campaign and agreed to provide funds.

Status: Funds have been released and a rough edit of the video received. Final cut version of the video was released in late calendar year 1994 and is available from NOAA's Marine Debris Information Office (see p. 1 for address).

2. MITIGATION

a. National coastal cleanup campaign (continued) \$ 55.0K

The MERP and EPA continue to cooperate in providing funding for the continuation of this annual event. The National Coastal Cleanup Campaign is held each year during COASTWEEKS and is highly successful both in promoting national public awareness of the marine debris problem and in assisting in the cleanup and prevention of coastal and shoreline debris.

Status: Work under this task continues. Annual reports are available from the Center for Marine Conservation, 1725 DeSales Street, NW, Suite 500, Washington, D.C. 20036, (202) 429-5609.

b. Debris removal from Hawaiian monk seal beaches (continued) \$ 25.0K

This is a continuing task that provides funding assistance to the research teams working to understand and protect the highly endangered Hawaiian monk seal. In the Northwest Hawaiian Islands, these teams make annual visits to monk seal hauling and pupping beaches to gather, catalog and destroy all of the entangling material that has come ashore.

Status: Work under this task continues. Periodic reports are available from the MERP office.

c. International promotion of Annex V ratification and implementation (continued) \$ 15.0K

This task gives the MERP management latitude to work effectively in the international arena when marine debris issues are involved. This involvement is particularly important in the Wider Caribbean Region because of the special area designation of the Caribbean and Gulf of Mexico. However, activities under this task are not limited to the Caribbean Region since the MERP management has been actively involved with IMO, IOC, UNEP and other international organizations on marine debris issues.

Status: Work under this task is expected to continue indefinitely.

d. Marine debris reduction in the Gulf of Maine (continued) \$ 25.5K

This is year two of a 3-year project initiated by the Gulf of Maine Council, a body comprised of public and private officials from New England states and the Maritime Provinces bordering the Gulf of Maine. The project will implement

public awareness programs and provide adequate waste reception facilities at fishing ports in the region.

Status: The MERP arranged for a grant to the Gulf of Maine Council through NOAA's Coastal Programs Division under the Coastal Zone Management Act. Delays in the granting process caused a late receipt of funds in FY 94. The MERP released funds early in FY 95 to try to avoid a repeat of this situation. Progress reports are available from the MERP office.

e. Net recycling feasibility study for the southern Gulf of Maine region (FY 94 funds) \$ 6.0K

Recently implemented mesh size regulations for trawls and gillnets in the New England Fisheries Management Council's Groundfish Plan rendered otherwise usable gear obsolete. Disposal options in the region are extremely limited and on the verge of becoming non-existent due to landfill closures and the simple fact that many of the available operations will not accept fishing nets. Thus, fishermen have few viable options for disposal, leading to illegal disposal ashore, or, worse, at sea.

This task provides funds to the Center for Coastal Studies to conduct a feasibility study for recycling fishing nets in the region. A decision to fund, or not to fund, a subsequent pilot project will be made pending the outcome of the feasibility study.

Status: Initial funding was provided late in FY 94. Progress reports are available from the MERP office.

f. Review of practical solid waste management practices in developing countries (FY 94 funds) \$ 10.0K

At the Third International Conference on Marine Debris, in May 1994, a great deal of attention focused on rural coastal and upland sources of marine debris pollution. Extensive discussions were held concerning development of framework plans and strategies to address and eventually control and reduce these sources. Conference attendees agreed that many of the approaches that apply to the problem of solid waste in the marine environment are inadequate to redress this problem, particularly in developing countries. More information is needed on practical approaches, preferably those that are community-based and readily implementable. Given the current interest of insular governments and international organizations in infrastructure development and socio-economic implications of solid waste management and marine debris pollution in the Caribbean Region, an opportunity exists to investigate such approaches.

This task provides funding to the Louisiana Sea Grant College Program at Louisiana State University (LSU) to gather, assemble, review, evaluate and report information on practical approaches, technologies and practices for dealing with solid waste management in rural and suburban communities in the developing world, with an emphasis on the Wider Caribbean Region.

Status: The MERP provided funds to LSU in late FY 94. Final report is due July 1995.

3. IMPACTS RESEARCH AND MONITORING

a. Surveys of entangling debris on Alaska beaches (continued) \$ 41.0K

Beginning its eleventh year, this task continues the collection of data to help determine the effectiveness of MARPOL Annex V. Surveys indicate that trawl web deposition on Alaska beaches is decreasing, but continuing and on-going surveys are necessary to determine the true effectiveness of Annex V.

Status: Work on this task continues. Periodic reports are available from the MERP office.

b. North Pacific fisheries observer debris data collection (continued) \$ 16.0K

This task will provide continued funding for collection, evaluation and reporting of marine debris data by observers at sea.

Status: Work on this task continues. Annual reports are available from the MERP office.

c. Effect of persistent marine debris on juvenile, pelagic sea turtles in the northeast Atlantic (continued) \$ 20.9K

This task will provide funds for continued research on the effects of persistent marine debris on juvenile sea turtles.

Status: Work on this task continues. Reports and related publications are available from the MERP office.

d. National marine debris monitoring program (continued) \$ 40.0K

This task provides funds to complete analyses of available marine debris data so that a statistically valid national monitoring program can be designed. The MERP continues to

cooperate with EPA, the National Park Service, the National Biological Survey and others in this effort.

Status: Work under this task continues. The final report is expected in early 1995.

e. Marine debris monitoring and reporting for offshore waters in the Gulf of Mexico (FY 94 funds) \$ 8.0K

The NMFS Laboratory in Pascagoula, Mississippi, conducts quarterly aerial surveys to determine abundance and distribution of cetaceans in the Gulf of Mexico. Along with cetacean sightings, other data, including floating debris sightings, are recorded.

This task will fund analyses of these marine debris sightings to determine distribution and abundance of large floating debris in the Gulf of Mexico and will help assess the progress of MARPOL Annex V, the feasibility of conducting aerial marine debris surveys, and, perhaps, assist in determining sources of debris.

Status: The MERP transferred funds in late FY 94. The final report is due in summer 1995.

4. MANAGEMENT

a. Program management \$107.4K

Funds allocated to this task support the office of the MERP manager.

Status: This is a continuing task.

b. Program statistician/data manager \$ 75.0K

Funds allocated to this task would provide a salary and benefits package for the hiring of a professional statistician/data manager for the MERP staff. This position would track and make best use of the volume of available data and information, archive, analyze and utilize unanalyzed data and provide statistical leadership in the design, execution and analysis of national and international marine debris monitoring programs.

Status: Due to Federal hiring restrictions, the MERP manager anticipates that this position will not be filled during 1995, thus creating a salary lapse. Possible options for utilizing these funds include:

- 1) Sponsorship of MARPOL V legal workshop;
- 2) Increase newsletter to 4 issues per year;
- 3) Chiniak Bay, Alaska, ghost fishing study;
- 4) Sublethal effects of marine debris on sea turtles
(cooperative with IOC/GIPME);
- 5) Gulf of Maine fishing gear recovery (year 1 of 2);
- 6) IOC associate support.

The decisions on which options to support, and the level of support, will be made if and when the need arises during FY 95.